

## Claims

1. A method for the detection of a compound that mimics, potentiates or inhibits the physiological effect of the ob-protein, which method comprises:
  - (a) for a compound which mimics the physiological effect of the ob-protein, assessing the effect of the compound upon an ob-protein activated signal transducer and activator of transcription (STAT) DNA response element coupled to a reporter gene; or
  - (b) for a compound which potentiates or inhibits the physiological effect of the ob-protein, assessing the effect of the compound upon the response provided by ob protein upon an ob-protein activated STAT DNA response element coupled to a reporter gene;
 wherein, the response element and the reporter are expressed in an ob-protein responsive cell line or ob-protein responsive cells, which cell line is an endothelium derived cell line and which cells are endothelium derived cells.
2. A method according to claim 1, wherein the endothelium-derived cell line is a human immortalised endothelial cell line, a murine or other non-human immortalised endothelial cell line.
3. A method according to claim 1 or claim 2, wherein the human endothelium derived cell line is an ECV304-human umbilical cord cell line.
4. A method according to any one of claims 1 to 3, wherein the murine endothelial cell line is selected from the list consisting of:
  - SVEC4-10 -endothelial lymph node cells, SV40 transformed;
  - SVEC4-10EE2 -endothelial lymph node cells, SV40 transformed;
  - SVEC-10EHR1 - endothelial lymph node cells, SV40 transformed;
  - IP-1B - endothelial lymph node cells, SV40 transformed;
  - 2F-2B - endothelial lymph node cells, SV40 transformed;
  - 3B-11 - endothelial lymph node cells, SV40 transformed;
  - 2H-11 -endothelial lymph node cells, SV40 transformed; and
  - MS1 (Mile SVEN 1)-endothelial pancreatic islet cells, SV40 transformed.
5. A method according to claim 1, wherein the endothelium-derived cells are human primary endothelial cells, or murine or other non-human primary endothelial cells.
6. A method according to claim 1, wherein the endothelium-derived cells are selected from the list consisting of:
  - HUVEC - human umbilical vein endothelial cells;
  - HUAEC - human umbilical artery endothelial cells;
  - HAEC - human aortic endothelial cells;
  - HPAEC - human pulmonary artery endothelial cells;
  - HDMECa - human microvascular endothelial cells, adult dermis; and

HDMEC<sub>n</sub> – human microvascular endothelial cells, neonatal dermis.

7. A method according to claim 1, wherein the polypeptide capable of stimulating an ob-protein activated STAT DNA response element is a functional isoform of the leptin receptor

8. A method according to claim 1, wherein the response element is coupled to a promoter gene, preferably a minimal promoter.

9. A method according to claim 1, wherein the response element is a nucleotide of formula TT(N)<sub>n</sub> AA, where N is any nucleotide and n is 4, 5 or 6.

10. A method according to claim 9, wherein the response element is TTCCCGGAA.

11. A method according to claim 9, wherein the response element is selected from: ATTTCCCCGAAAT, ATTTCCCGTAAAT, ACTTCTTGAATT and ACTTCTAGGAATT.

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